

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A probe array for an imaging system for examining an object comprising at least one emitter for emitting radiation, a plurality of detectors for detecting radiation and means for directing radiation emitted by the at least one emitter to the object and for directing radiation reflected from the object to at least two of the plurality of detectors wherein in use the emitted radiation is scanned across the object, wherein only a proportion of the total number of emitters and detectors are in use at any given time.

2. (Original) A probe array as claimed in claim 1 wherein the at least one emitter comprises a frequency conversion member which is configured to emit radiation of the desired frequency in response to irradiation by radiation of a different frequency.

3. (Original) A probe array as claimed in claim 1 wherein the at least one emitter and plurality of detectors are photoconductive devices.

4. (Previously presented) A probe array as claimed in claim 1 wherein the at least one emitter is configured to emit radiation having at least one frequency in the range 25 GHz to 100 THz.

5. (Previously presented) A probe array as claimed in claim 1 wherein the at least one emitter is configured to emit pulses of radiation having a plurality of frequencies, at least one of said frequencies being in the range from 25 GHz to 100 THz.

6. (Previously presented) A probe array as claimed in claim 1 wherein the array further comprises means for raster scanning the emitted radiation.

7. (Previously presented) A probe array as claimed in claim 1 wherein the array comprises a single central emitter surrounded by the plurality of detectors.

8. (Previously presented) A probe array as claimed in claim 7 wherein the plurality of detectors are directed towards a point such that in use the object is located at this point.

9. (Previously presented) A probe array as claimed in claim 7 wherein the central emitter directs the emitted radiation into a directed beam.

10. (Currently amended) A probe array as claimed in ~~any~~ of claim 1 wherein the array comprises a substantially equal number of emitters and detectors.

11. (Previously presented) A probe array as claimed in claim 10 wherein the array is formed into a two dimensional array of emitters and detectors.

12. (Previously presented) A probe array as claimed in claim 10 wherein the array is formed into a one dimensional stack of interleaved emitters and detectors.

13. (Previously presented) A probe array as claimed in claim 12 wherein the emitters are arranged in use to form an extended focus of emitted radiation substantially parallel to the array.

14. (Previously presented) A probe array as claimed in claim 12 wherein the array is raster scanned by linear translation of the stack.

15. (Previously presented) A probe array as claimed in claim 12 wherein the array is raster scanned by rotation about an axis through the stack of emitters and detectors.

16. (Previously presented) A probe array as claimed in claim 12 wherein each emitter and detector is mounted within a self contained housing module.

17. (Previously presented) A probe array as claimed in claim 16 wherein each module is capable of forming a stack with similar modules.

18. (Canceled).

19. (Previously presented) A probe array as claimed in claim 2 wherein the array further comprises a lens array to focus the irradiating radiation onto the at least one emitter and plurality of detectors.

20. (Previously presented) A probe array as claimed in claim 2 wherein the irradiating radiation is supplied by means of a number of optical fibres.

21. (Previously presented) A probe array as claimed in claim 20 wherein a separate optical fibre supplies irradiating radiation to a single emitter/detector.

22. (Previously presented) A probe array as claimed in claim 20 wherein the lens array is located between the optical fibres and the at least one emitter and plurality of detectors and wherein only a proportion of the total number of emitters and detectors are in use at any given time.

23. (Previously presented) A probe array as claimed in claim 2 wherein the array further comprises a THz transmitting array to couple in or out any THz radiation.

24. (Previously presented) A probe array as claimed in claim 23 wherein the THz transmitting array is constructed from any of the following; polythene, polypropylene, silicon, alumina, aluminum, aluminum nitride, aluminum carbide, silicon nitride, germanium, paraffin-wax or any other suitable polymer, ceramic or semiconductor.

25. (Previously presented) An imaging system for examining an object comprising a probe array as claimed in claim 1 and signal processing means for analyzing the radiation detected by the probe array.

26. (Previously presented) An imaging system for examining an object as claimed in claim 25 further comprising a source of e/m radiation for irradiating the probe array.

27. (Previously presented) An imaging system as claimed in claim 26 wherein the source provides a beam of radiation and the system further comprises a series of beam-splitters and fibre couplers, each beam-splitter being arranged to couple a proportion of the beam of radiation via a fibre coupler into an optical fibre such that in use the optical fibre irradiates the probe array.

28. (Previously presented) An imaging system as claimed in claim 26 wherein the source provides a beam of radiation and the system further comprises a lensing array, the array being arranged in use to couple a proportion of the beam into an optical fibre such that the fibre irradiates the probe array.

29. (Previously presented) An imaging system as claimed in claim 25 wherein the probe array is configured as a hand-held unit and the source and signal processing means are housed in a base unit, the hand-held unit and base unit being connected via optical fibre.

30. (Original) A method of examining an object, the method comprising: emitting a beam of radiation from at least one emitter, said emitted radiation being in the THz frequency range; directing the emitted radiation to irradiate an object; directing radiation reflected from the object into some or all of a plurality of detectors wherein the emitted radiation is raster scanned across the object to be examined.

Claims 31-33 (Canceled).